Amendments to the Claims

Kindly cancel claims 4, 5, 11, 12, 17, and 18, without prejudice, and amend claims 1-3, 6-10, 13-16 and 19-20, as set forth below. In compliance with the Revised Amendment Format published in the Official Gazette on February 25, 2003, a complete listing of claims is provided herein. The changes in the amended claims are shown by strikethrough (for deleted matter) and underlining (for added matter).

1.   (Currently Amended) A method of balancing workload of a computing environment, said method comprising:

    obtaining, by a manager daemon of one system of a grid computing environment, scheduler information from a scheduler of another system of the grid computing environment, said scheduler information including current free nodes of the another system, job queue of waiting jobs for the another system, shadow time for the next waiting job of the another system indicating how long the job needs to wait for resources, and one or more resources protected by shadow time; and

    performing by the manager daemon workload balancing of at least two systems of the grid computing environment, each system of the at least two systems comprising a scheduler to schedule workload on its system, said workload balancing using at least a portion of the obtained scheduler information, and wherein the workload balancing comprises backfill scheduling a job, said backfill scheduling allowing the job to run out of order as long as it does not affect the start time of another job scheduled to execute.~~obtaining information regarding one or more systems of a plurality of systems of a grid computing environment; and~~

    ~~balancing workload of at least two systems of the plurality of systems using at least a portion of the obtained information.~~

2.   (Currently Amended) The method of claim 1, wherein the ~~obtaining comprises obtaining by a manager daemon of the grid computing environment the information from one or more schedulers associated with the one or more systems~~scheduler on each system comprises a complex scheduler.

3.   (Currently Amended) The method of claim 2̶1, wherein scheduler information is obtained from at least two schedulers, and wherein one scheduler of the at least two schedulers is a different scheduler from at least one other scheduler of the at least two schedulers.

4.   (Canceled)

5.   (Canceled)

6.   (Currently Amended) The method of claim 1, wherein the workload balancing includes:

     determining which system of said at least two systems a job is to be assigned; and

     assigning the job to the determined system.

7.   (Currently Amended) The method of claim 1, wherein the workload balancing includes:

     removing a job from one system of the at least two systems; and

     assigning the job to another system of the at least two systems.

8.   (Currently Amended) A system of balancing workload of a computing environment, said system comprising:

     means for obtaining, by a manager daemon of one system of a grid computing environment, scheduler information from a scheduler of another system of the grid computing environment, said scheduler information including current free nodes of the another system, job queue of waiting jobs for the another system, shadow time for the next waiting job of the another system indicating how long the job needs to wait for resources, and one or more resources protected by shadow time; and

     means for performing by the manager daemon workload balancing of at least two systems of the grid computing environment, each system of the at least two

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systems comprising a scheduler used to schedule workload on its system, said workload balancing using at least a portion of the obtained scheduler information, and wherein the workload balancing comprises backfill scheduling a job, said backfill scheduling allowing the job to run out of order as long as it does not affect the start time of another job scheduled to execute.~~means for obtaining information regarding one or more systems of a plurality of systems of a grid computing environment; and~~

~~means for balancing workload of at least two systems of the plurality of systems using at least a portion of the obtained information.~~

9.   (Currently Amended) The system of claim 8, wherein the scheduler on each system comprises a complex scheduler~~means for obtaining comprises means for obtaining by a manager daemon of the grid computing environment the information from one or more schedulers associated with the one or more systems.~~

10.   (Currently Amended) The system of claim ~~9~~8, wherein scheduler information is obtained from at least two schedulers, and wherein one scheduler of the at least two schedulers is a different scheduler from at least one other scheduler of the at least two schedulers.

11.   (Canceled)

12.   (Canceled)

13.   (Currently Amended) The system of claim 8, wherein the mean for workload balancing includes:

means for determining which system of said at least two systems a job is to be assigned; and

means for assigning the job to the determined system.

14.   (Currently Amended) The system of claim 8, wherein the means for workload balancing includes:

means for removing a job from one system of the at least two systems; and

means for assigning the job to another system of the at least two systems.

15.   (Currently Amended) An article of manufacture comprising:

at least one computer usable medium having computer readable program code logic to balance the workload of a computing environment, the computer readable program code logic comprising:

obtaining, by a manager daemon of one system of a grid computing environment, scheduler information from a scheduler of another system of the grid computing environment, said scheduler information including current free nodes of the another system, job queue of waiting jobs for the another system, shadow time for the next waiting job of the another system indicating how long the job needs to wait for resources, and one or more resources protected by shadow time; and

performing by the manager daemon workload balancing of at least two systems of the grid computing environment, each system of the at least two systems comprising a scheduler used to schedule workload on its system, said workload balancing using at least a portion of the obtained scheduler information, and wherein the workload balancing comprises backfill scheduling a job, said backfill scheduling allowing the job to run out of order as long as it does not affect the start time of another job scheduled to execute.obtain logic to obtain information regarding one or more systems of a plurality of systems of a grid computing environment; and

balance logic to balance workload of at least two systems of the plurality of systems using at least a portion of the obtained information.

16.   (Currently Amended) The article of manufacture of claim 15, wherein the scheduler on each system comprises a complex schedulerobtain logic comprises logic to

~~obtain by a manager daemon of the grid computing environment the information from one or more schedulers associated with the one or more systems.~~

17.   (Canceled)

18.   (Canceled)

19.   (Currently Amended) The article of manufacture of claim 15, wherein the workload balance logic includes:

        determine logic to determine which system of said at least two systems a job is to be assigned; and

        assign logic to assign the job to the determined system.

20.   (Currently Amended) The article of manufacture of claim 15, wherein the workload balance logic includes:

        remove logic to remove a job from one system of the at least two systems; and

        assign logic to assign the job to another system of the at least two systems.